

OWNER'S MANUAL

WILLYS STATION WAGON • JEEPSTER • SEDAN DELIVERY
MODELS 4-73 • 6-73





A Message To You . . .

This booklet has been prepared as a special message to you as the owner and driver of a Willys-Overland produced car.

Experience during the war years, when it was impossible to purchase a new car, clearly demonstrated the value of careful driving and pre-

ventive maintenance to increase economy and car life. With this thought in mind we have in this booklet, in addition to giving the usual operating information, stressed preventive maintenance and offered many driving suggestions to enable you to secure the maximum economy and increased satisfaction in ownership. Included are suggestions for safer driving, how to save fuel, how to anticipate trouble and many similar items. We have not included detailed mechanical information for we feel that this information is of primary interest to the mechanic.

Should you wish detailed information your dealer will be glad to advise you without obligation for he receives all Factory bulletins, specifications and manuals. Also, beyond a doubt either he or one of his mechanics has been trained at the Factory Service School.

Take the time to read this booklet. In it you will find the answer to many things you wish to know about your car. It has been prepared as your guide to safer, more economical car performance.

WILLYS-OVERLAND MOTORS



Manufacturer's Warranty

To assure an equitable basis to adjust any possible fault which might develop in the operation of your car it was sold to you under the terms of the standard warranty prepared by the Automobile Manufacturers' Association. This is identical to the warranty used by all manufacturers and is printed below:

"This is to certify that we, WILLYS-OVERLAND MOTORS, INC., TOLEDO, OHIO, U.S.A. warrant each new passenger automobile and truck or other motor vehicle manufactured by us, to be free from defects in material and workmanship under normal use and service, our obligation under this Warranty being limited to making good at our factory any part or parts thereof, including all equipment or trade accessories (except tires) supplied by the car manufacturer, which shall within ninety (90) days after making delivery of such vehicle to the original purchaser or before such vehicle has been driven 4,000 miles (6500 km.), whichever event shall first occur, be returned to us with transportation charges prepaid, and which our examination shall disclose to our satisfaction to have been thus defective; this warranty being expressly in lieu of all other warranties expressed or implied and of all other obligations or liabilities on our part, and we neither assume nor authorize any other person to assume for us any lia-

bility in connection with the sale of our vehicles."

"This warranty shall not apply to any vehicle which shall have been repaired or altered outside of an Authorized Willys-Overland Service Station in any way so as in the judgment of the Manufacturer, to affect its stability or reliability, nor which has been subject to misuse, negligence or accident."

The Manufacturer makes no warranty against, nor assumes any liability for any defect in metal or other material in any part, device or trade accessory which cannot be discovered by ordinary factory inspection.

WILLYS-OVERLAND MOTORS, INC.

NOTE: Willys-Overland Motors, Inc., reserves the right at any time or times to revise, modify, discontinue or change any model or models of its vehicles, or any part or parts thereof, without notice; and, without it or the Seller, incurring any liability or obligation to the Purchaser.



Owner's Service Policy

Your car was carefully inspected and lubricated at the Factory. Before delivering it to you, your Dealer gave it a pre-delivery inspection and tune-up using the New Vehicle Inspection Form supplied by the Factory. This form was then returned to us and added to the permanent records covering your car. This inspection was made as a precaution and to be sure that your car was in perfect condition when it was delivered.

At delivery you received your Owner's Service Policy which specifically outlines the service to which you are entitled during the warranty period of ownership. This Policy is designed for your protection and you should read it carefully.

Parts replaced under the terms of the warranty must be left with the Dealer who installed the new parts.

Should there be any doubt that parts are subject to credit be sure to leave your forwarding address so that credit can be forwarded to you if issued.

As outlined in the Policy you are entitled to a thorough vehicle inspection, including complete lubrication, at 1,000 miles and again at 2,000 miles at no cost to you other than for engine oil and antifreeze required. You are also entitled to the free replacement, both for labor and material, of any parts which prove faulty within the warranty period. Any authorized Willys-Overland Dealer in the United States will make replacement on this basis although it is best to have the Dealer from whom you purchased your car make the replacement if possible.



License and Insurance Data

The information which you will require when securing your license or purchasing insurance is listed on this page. To have this information for future reference write in your car serial number, engine number and key number in the space provided below.

All Factory information regarding your car is filed under the car serial number and that number must be quoted should you request information or order parts.

The serial number of the Station Wagon and Sedan Delivery is stamped on a plate which is mounted on the vehicle floor riser to the left and directly back of the driver's seat.

The serial number of the Jeepster is stamped on a plate which is mounted under the edge of the cowl directly above the glove compartment door.

The serial number of the four cylinder engine is stamped on a boss on top of the cylinder block directly back of the water pump.

The serial number of the six cylinder engine is stamped on the right side of the cylinder block above the generator.

Car Serial Number.....28230
 Ignition Key Number.....C399
 Engine Number.....P-22199
 Other Key Numbers.....

LICENSE AND INSURANCE DATA

	Model 4-73	Model 6-73
Number of cylinders.....	4	6
Bore.....	3 $\frac{1}{8}$ "	3 $\frac{1}{8}$ "
Stroke.....	4 $\frac{3}{8}$ "	3 $\frac{1}{2}$ "
Piston Displacement.....	134.2 cu. in.	161 cu. in.
Horse Power.....	15.6	23.44
(For License Purposes)		
Horse Power.....	72	75
(Actual at 4000 r.p.m.)		
Wheelbase.....	104 in.	104 in.

MODEL 4-73

	Shipping Wt.	Curb Wt.
Station Wagon.....	2818	2943
Jeepster.....	2459	2584
Sedan Delivery.....	2620	2745

MODEL 6-73

	Shipping Wt.	Curb Wt.
Station Wagon.....	2831	2957
Jeepster.....	2485	2610



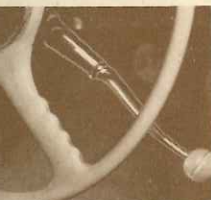
Vehicle Controls

The driving controls are positioned within easy reach to permit operation with the greatest safety. These controls are the gearshift, clutch and brake pedals, accelerator, choke and starter, hand brake, overdrive and the windshield wiper control.

GEARSHIFT

The remote control gearshift lever mounted on the steering column controls the position of the gears in the transmission.

When the engine is running the clutch pedal must be depressed before moving this lever. When you shift into low gear for starting or heavy pulling, depress the clutch pedal and move the lever up and back toward you. To engage second gear, move it forward to the center or neutral position, then down and forward. High gear position is directly back from second, and reverse is up through neutral and fully forward.



CLUTCH AND BRAKE PEDALS

The clutch pedal is the pedal at the left and is provided to engage and disengage the engine power to allow shifting of the transmission gears. When the pedal is depressed engine power is disengaged.

You should check occasionally to be sure that there is about one inch free travel or noneffective movement of the pedal at all times, for otherwise, the clutch parts may wear rapidly. Avoid riding the clutch or resting your foot on the pedal while driving.

The brake pedal is provided to control your brakes under normal conditions. Should it be necessary to depress the pedal more than

one-half of the travel to satisfactorily stop your car, the brakes should be adjusted for safety.

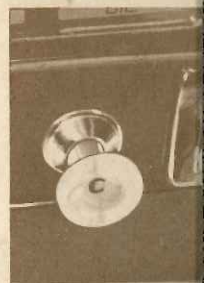
ACCELERATOR

The accelerator is provided to operate the carburetor throttle valve which controls the engine speed. The pedal is designed to provide the most comfort for long trips and assure positive control of car speeds. Depress and release the pedal gradually, for "tramping" on it wastes fuel.

CHOKE

The choke controls a valve, mounted in the carburetor air intake, which when closed blocks off the air flow to provide the rich fuel mixture required to start a cold engine.

Pull out the choke control only until the engine starts, and then push it in until the engine runs smoothly. Too much choking is indicated should the engine "gallop" or run unevenly, and too little if there is spitting back through the carburetor. Push the control all the way in as soon as the engine is warm and runs smoothly.



STARTING MOTOR CONTROL

The starting pedal next to the accelerator meshes the starting motor drive pinion with the flywheel gear and also completes the electrical contact to operate the starting motor. Release the pedal as soon as the engine starts.

HAND BRAKE

The hand brake control is located under the edge of the instrument panel at the left of the steering column. You should make it a practice to set the brake when parking. Pull up on the control handle to set the brake and release it by turning the handle one-quarter turn either right or left. Should you wish to make an extra hard brake application when parking on a steep hill, pull up the control handle and at the same time depress the foot brake pedal. When parking on a hill, always cramp the front wheels toward the curb or engage reverse gear by moving the gearshift lever to the reverse position.

WINDSHIELD WIPER CONTROL

The windshield wiper control is mounted in the center of the instrument panel at the top. Turning the control knob to the right operates the wipers. Speed of operation may be adjusted by turning the control the amount necessary to secure any desired speed.

OVERDRIVE

If your car is equipped with an overdrive, use it

whenever possible to secure the greatest pleasure and saving of fuel. You should not use it however, when driving in mountainous country or when descending steep hills. You will have more stable control of your car if you use conventional drive when on roads glazed with ice.

To engage overdrive, you need only to push in the overdrive control button at the end of the instrument panel. This may be done at any car speed. When this is done overdrive operation becomes automatic at car speeds above approximately 30 miles per hour, as soon as you release the accelerator momentarily.

When you use overdrive, acceleration is reduced because of the speed ratio. Should you desire to pass another car or require fast speedup, press the accelerator firmly to the toe board. This trips a switch which temporarily disengages the overdrive to provide the increased pickup you desire. To shift back into overdrive, it is only necessary to again release the accelerator momentarily.

If overdrive is not desired simply pull out the overdrive control button. This may be done when your car is in motion. If the control is hard to pull out, press the accelerator to the toe board. There may be slight gear clash if you are traveling less than about 25 miles an hour, in which case speed up the engine slightly until the gears to be shifted are turning about the same speed, which will allow a quiet shift.

A free wheeling unit is built into the overdrive which makes it unnecessary when driving in overdrive, for you to depress the clutch pedal when shifting gears at speeds under 21 to 25 miles an hour except when starting or stopping.





Instruments

The instruments are clustered at the center of the instrument panel. They are the fuel, oil pressure and temperature gauges; ammeter and speedometer.

FUEL GAUGE

The fuel gauge is electrically operated and registers only when the ignition key is turned. The gauge shows the fuel level in the tank in fourths, which is about $3\frac{3}{4}$ gallons per mark or 15 gallons at the "F" or full mark.

OIL PRESSURE GAUGE

The oil pressure gauge does not indicate the amount of oil in the engine but shows the pressure under which the oil circulates in the engine oil lines. When starting your engine and also occasionally while driving glance at the gauge to be sure that pressure is indicated. Should the pressure fail, stop your engine immediately or it may be seriously damaged. Standard pressure with warm oil is about 10 lbs. at idle speed and 30 to 35 lbs. maximum depending upon engine speed. Pressures will be slightly higher when the oil is cold.

AMMETER

The ammeter indicates the charging rate of the generator. Due to the current control regulator the generator only charges when the battery requires current so do not be concerned if the ammeter hand remains near the zero mark at times when your engine is run-

ning. When the battery is fully charged, the ammeter should show charge for a short time after starting until the generator has again replaced the current used in starting.

Either a constant discharge shown on the ammeter while you are driving or a constant charge of more than an ampere or two when it is known that the battery is fully charged indicates trouble and you should have your Dealer check the charging circuit.

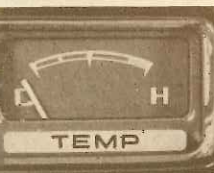
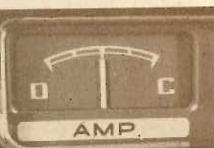
TEMPERATURE GAUGE

The temperature gauge indicates the temperature of your engine at all times so that you may guard against overheating which might cause serious engine damage. The gauge should register between 160 and 180 degrees in normal operation. It will vary slightly depending upon air temperatures.

SPEEDOMETER

The speedometer, located at the center of the instrument panel, registers road speeds and the odometer below the indicating needle records the mileage traveled.

It requires no service attention other than proper lubrication of the drive shaft. Once each year or each 10,000 miles remove the shaft from the conduit and coat it with light graphite grease.



IGNITION SWITCH

The ignition switch is operated by a key which must be turned to the right to start your engine. When turned in this position the gauges connected through the switch will operate and also the accessories when the individual switches are on. Turn the key to the left if you wish to operate your heater, radio or other accessories when the engine is not running.

Always remove your ignition key from the lock when you park your car. This is good insurance against theft and is required by law in some places.

LIGHT SWITCH

The light switch mounted at the lower center of the instrument panel is a combination push-pull and rotary type. Push or pull the control knob to operate the headlights and turn it to the left and back to operate the instrument panel and dome lights.

When the control knob is pushed in, no lights are lit. Pulling it out halfway operates the parking lights and all the way out the headlights.

Turning the knob to the left operates a rheostat which controls the instrument panel light. As the knob is turned the light becomes progressively brighter. The dome light is controlled by turning the knob to the extreme left.

FOOT DIMMER SWITCH

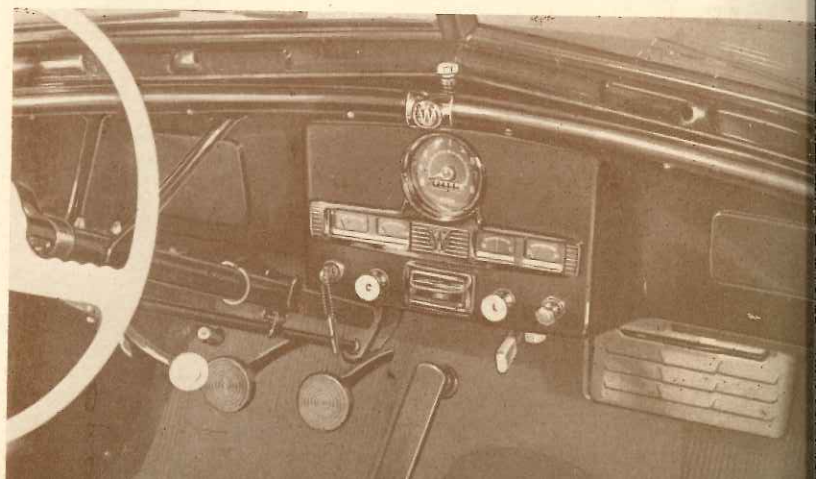
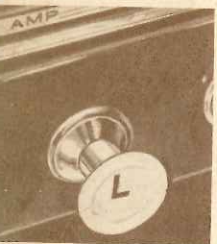
The foot dimmer switch is mounted on the toeboard to the left of the clutch pedal.

Either high beam lights for country driving or low beam for passing and city driving may be used at will by alternately pressing this switch.

A ruby light mounted at the lower center of the speedometer lights as a warning when the high beam lights are in use. Safety and courtesy requires you to heed this warning and switch to low beam lights when meeting another car on the road or when driving in the city.

STOP LIGHT SWITCH

The stop light switch is of the hydraulic diaphragm type and the operation is automatic as the brake pedal is depressed. It is mounted in the forward end of the brake master cylinder, under the toeboard, directly in front of the brake pedal. To inspect it, raise the hood.





Body Details

The body of your car has been designed for long life, utility and maximum convenience. The Station Wagon rear seats are quickly removable to increase stowage space and ventilation is provided by a cowl ventilator and adjustable ventilating windows.

ADJUSTING THE DRIVER'S SEAT

The Station Wagon driver's seat may be quickly adjusted to the most comfortable position by releasing the lock mounted at the left front edge of the seat frame to shove the seat back or forward as you desire.

Both the Jeepster and Sedan Delivery driver's seats are adjusted by removing the attaching wing nuts and moving the seat back or forward to align matching holes in the mounting supports.

HOOD LATCH

The hood lock release latch is mounted back of the radiator guard. To release the lock, reach in through the radiator grille and press in on the latch which will allow you to raise the hood against the safety catch.

Release the safety catch by pressing up against the turned upper edge of the catch or pull the lower end of the catch forward to open the hood.

After opening, the hood is held safely open by a prop rod, the lower end of which slides on the radiator brace rod.

ASH RECEIVER

An ash receiver is located at the center of the instrument panel directly underneath the instrument cluster. It is opened by pulling out. To remove the tray for cleaning, press down on the cigarette snuffer and pull out on the tray.

VENTILATION

Due to the formation of carbon monoxide in the exhaust system it is unsafe for you to ride in any car, even in the coldest weather, with all the windows and vents closed.

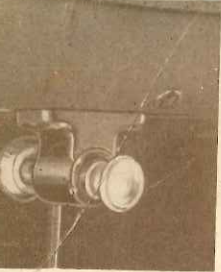
Your Station Wagon body is ventilated for comfort and safety through a standard cowl ventilator, adjustable ventilating windows in the front doors, standard front door windows which raise and lower with hand cranks and side sliding windows.

The cowl ventilator is operated by a hand control lever mounted under the instrument panel at the center. Push the control forward to open the ventilator as desired.

The front door windows raise and lower with hand cranks in the conventional manner.

To open a ventilating window lift the control





lever to the vertical position and push outward. The window may be positioned as desired to deflect air inside the body.

The Station Wagon side windows slide forward to open. Pull out the latch and push the glass forward as required. The window is automatically locked, when closed, by the spring loaded latch.

LOCKS AND LATCHES

A trigger type door handle is used on the side doors of closed cars. To open the doors squeeze the trigger latch mounted in the inner surface of the handle as you pull the door open. A remote control push button releases the catch on the inside.

The Jeepster doors are equipped with conventional door handles with a remote control lever on the inside.

The Sedan Delivery rear door handle is of the conventional type as is the upper tail gate handle on the Station Wagon.

To lock the doors on the inside, slide up the small control button mounted on the door.

For your convenience both the ignition and door locks are designed to require one key only for operation. Spare keys are available at the Factory, however it will be necessary to designate the key number when ordering.

Some glove compartment doors are equipped with lock type latches. The keys for these are not the same as the ignition key.

Tool compartments are provided under the front seat at each side. To open a compartment door press in on the latch button.

STATION WAGON TAIL GATE

The Station Wagon tail gate is divided at the center. The upper section is equipped with a conventional lock and has large windows to provide clear view in the rear vision mirror. Folding braces are provided to hold it in the open position.

To open the lower tail gate, release the lever type latches at each end by pulling up. When closing it be sure the latches are pushed down firmly as they are designed to pull the gate firmly against the body to prevent noise.

When the lower gate is open, it is supported by two folding rods. These rods are designed to carry the rear edge of the tail gate slightly higher than the inner edge so that luggage or other articles will move forward due to road bounce or vibration to minimize possibility of loss.

STATION WAGON SEATS

The front passenger seat is double hinged which allows the entire seat to fold forward for easy entrance to the rear passenger compartment. The driver's seat back is also hinged to allow entrance from the left side.

Should you wish to remove the rear seat to increase the loading capacity, raise the rear of the seat until the legs snap from their spring loaded sockets and pull the front legs from underneath their retaining cleats.





Engine Operation

Suggestions are offered below which may aid you to secure longer and more economical engine life. Even though you are an experienced driver it will well pay you to read them carefully.

STARTING THE ENGINE

To start the engine place the ignition key in the lock and turn it to the right. Depress the clutch pedal with the left foot and the starting control pedal with the right foot. Pull the choke control button part way out until the engine starts. Allow the engine to idle, pushing the choke control all the way in as soon as the engine has warmed sufficiently to provide smooth idle.

Should the engine become "flooded" or too much fuel enters the cylinders due to overchoking, push in the choke control and operate the starting motor with the accelerator pedal fully depressed. This allows the maximum amount of air to enter and thin out the surplus fuel until it will fire. Do not "pump" the accelerator pedal.

HINTS FOR ECONOMY

Do not use the choke more than absolutely necessary. Excessive choking forces nearly liquid fuel into the cylinders to wash away the oil and increases engine wear. Excess fuel will also mix with the engine oil to dilute it.

Never "race" your engine especially when cold. When any engine stands for some time the oil drains away from the closely fitted parts. For maximum life and economy an engine should be allowed to run idle and without load until the oil is warmed and re-circulated to all moving parts. High road

speeds and heavy loads do no harm after the engine is thoroughly warmed.

Never pump the accelerator excessively when starting. Too much fuel is forced into the engine to cause possible hard starting, oil dilution and extra wear.

Have your engine "tuned" periodically. Maximum efficiency and economy can only be expected when spark plugs, distributor and carburetor are in peak condition. Through use, all spark plug electrodes and distributor points oxidize or burn slightly to change their adjustment and in spite of any possible precautions some water and dirt will accumulate in the carburetor. It is only good judgment for you to have your Dealer make these adjustments at least twice a year.

THE FUEL YOU SHOULD USE

When your engine left the factory the spark setting was adjusted for best engine performance, using standard grades of gasoline with a clean combustion chamber. When excessive carbon accumulation becomes evident by audible spark knock it is a sign that either the head should be cleaned, the spark should be retarded or premium gasoline should be used. These instructions apply to all engines, whether furnished with high, standard or low compression ratios.

Owners living at altitudes above 5000 feet who have their engines equipped with high altitude head should consider retard-

ing the spark or use of premium fuels when taking extended trips into altitudes nearer sea level.

It is wise however, for you to use only a nationally advertised brand of fuel, protected by a valuable trade-mark for you can then be sure that you receive fuel made to an established specification and as nearly free as possible of dirt and moisture. When your engine has been adjusted for best operation when using a specific brand of fuel it is best to always use that brand when possible.

BREAK-IN SPEEDS

Through modern manufacturing methods the parts in your car are fitted to closer limits than was thought possible a few years ago, and at the same time a "free" assembly is made which eliminates much of the slow, cautious driving previously required during the first few hundred miles.

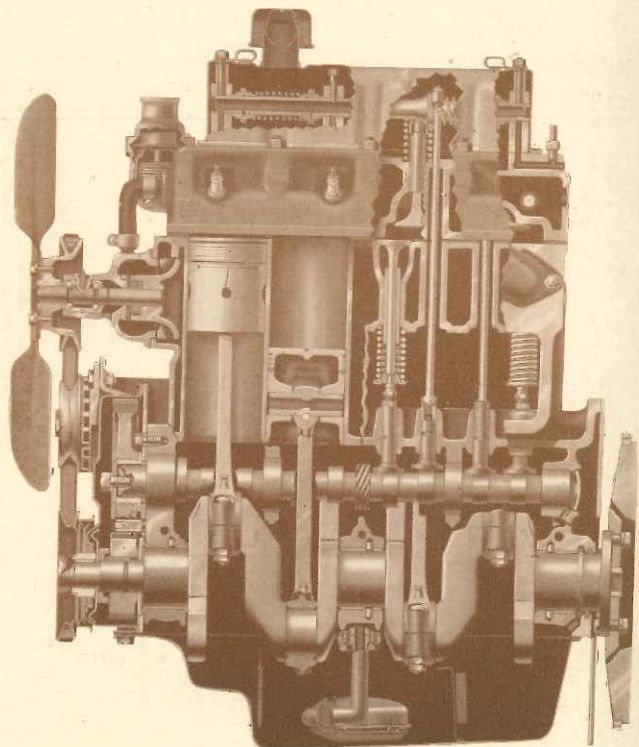
You should realize however, that the care you use during this initial "break-in" will determine to a large extent the trouble-free operation and satisfaction which you will enjoy during ownership.

You should not drive faster than 45 miles an hour during the first 250 miles of operation. Slightly higher speeds during the next 250 miles will do no harm, providing they are not sustained. At no time should maximum speeds be undertaken until thorough break-in is completed at 1,000 to 1,500 miles. During the break-in driving you should be alert to detect unusual overheating of any unit. Should this occur, reduce your speed until this unit becomes run-in.

CARE OF YOUR ENGINE

Your engine represents a sizeable investment and it is only good judgment for you to protect this investment by using some care in its operation. Keep it clean and make it a practice

to check the water level and the condition of the oil each time you buy fuel. Remember that excessive heat is the chief cause of engine trouble and reduced life. Watch your heat indicator and reduce speed or stop should there be any indication of overheating.





Driving Suggestions

A good driver is a careful driver who always has his car under perfect control regardless of conditions. In the following paragraphs suggestions are given which may help you to become a better driver.

The combination of insulated body, engine smoothness and absence of road shock makes it extremely difficult to guess the speed at which you are traveling. Watch the speedometer.

When traveling on the open highway, drive at a steady pace. At the end of the day you will be ahead of the driver who is continually increasing and decreasing speed. You will also have used less fuel.

When driving up a steep hill don't allow your engine to labor. Drop back into a lower gear provided for this purpose.

When descending a steep hill remember this simple rule; use the same gear going down that you would use going up. If it is necessary to use the brakes apply them by a succession of "snubbing" actions rather than by continuous pressure of the pedal.

Don't take chances when passing other cars. Be sure there is plenty of time and always wait until you can see the car you have just passed in the rear view mirror before turning in front of it.

Never try to pass a car when approaching the top of a hill or

when entering a curve for you cannot see what may be coming. Keep well to the right until you can see ahead.

When driving on slippery pavements, anticipate the necessity of stopping and apply the brakes gently with a series of light applications and do not disengage the clutch until the car is nearly stopped. This helps to prevent skidding.

There is no universal rule concerning skidding, however, as a general practice if your car starts skidding, turn the front wheels in the direction of the skid, at the same time ease off on the brake pedal. Under no circumstances apply the brakes or disengage the clutch during a skid. Skidding danger may be reduced by cautious driving and proper attention to highway markers and traffic.

Should one wheel run off the highway the natural inclination is to immediately turn the car back on the highway or jam on the brakes. Neither method is safe at high speeds. It is best to take your foot off the accelerator and allow your car to slow down gradually until it can be turned back on the highway safely without sway. The same is true should a tire blow out. Don't jam on your brakes but coast nearly to a stop before using the brakes.



Driving Economy

Your Station Wagon or Jeepster has a well earned reputation for economical operation. You may, however, unknowingly waste fuel due to driving habits which are easily formed. The following "hints" may assist you to secure best economy.

Few drivers realize how expensive it is to drive at high speeds. Any automobile engine uses about twice as much fuel at 60 miles per hour as it does at 30 miles per hour. It is necessary for you to travel at moderate speeds or sacrifice economy.

Operate the accelerator gently both when increasing and decreasing speeds. Tramping on it forces more fuel into the engine than can be economically used.

Use the choke only when necessary to start your engine when it is cold. Be sure the control is pushed in as the engine warms up.

Holding your car in second gear until you get up to high speeds may easily double the fuel you should use in getting under way. Shift into high gear as soon as the engine will run smoothly in that gear.

Don't allow your engine to idle for long periods. Park your car in the shade when possible; the hot sun evaporates your fuel. Avoid unnecessary starts and stops. When driving in city traffic look ahead to judge the speed of other cars and the

timing of traffic lights. This practice will allow you to avoid many starts and stops which use extra fuel.

Keep your tires inflated to the recommended pressure. Under-inflated tires cause more road friction which requires additional fuel.

Keep your car well lubricated with the correct grade of lubricant. The use of too heavy lubricants in cold weather places extra drag on operating parts to waste fuel.

Stop and go driving, short trips only from home to office or store use extra fuel, especially in the winter. You cannot expect best economy if your driving is of this type.

If your driving, especially in winter, consists of short trips only you should plan to occasionally take a longer trip at highway speeds. Heat generated will "dry out" your engine, evaporating any fuel which has mixed with the oil and will remove many deposits of soft carbon. You will be surprised at the improved engine performance, which also means improved economy, after such a drive.



Lubricate for Economy

Correct and regular lubrication is the keystone of preventive maintenance. Regular lubrication will protect your investment and assure you reduced cost of operation.

ENGINE LUBRICATION

It will be economical for you to always use the best quality oil obtainable. Select an oil which is backed by a manufacturer of long standing who has a valuable trade-mark to protect through quality.

In addition to the selection of a high quality oil, pay careful attention to the oil level in the crankcase and change oil at the recommended intervals.

When your car was delivered to you the crankcase was filled with the correct oil for the "break-in" period. Completely drain the crankcase, when the oil is hot, at 500 miles and again at 1,000 miles and then at least at each 2,000 miles of operation. Use the correct grade of oil for the average air temperature

which is likely to occur. The correct grades are shown below:

Above 90° Fahr.....	SAE 30
Not lower than 30° above zero Fahr.....	SAE 20 or 20W
As low as 10° above zero Fahr.....	SAE 20W
As low as 10° below zero Fahr.....	SAE 10W
Lower than 10° below zero Fahr.....	SAE 10W plus
10% kerosene or.....	SAE 5W

At least once a year, preferably in the spring, remove the oil pan and floating oil intake and wash them thoroughly with cleaning solvent.



DRAIN ENGINE OIL WHEN HOT AT 500 MILES, AGAIN AT 1000 MILES AND EACH 2000 MILES THEREAFTER. SEE SPECIFICATION CHART.

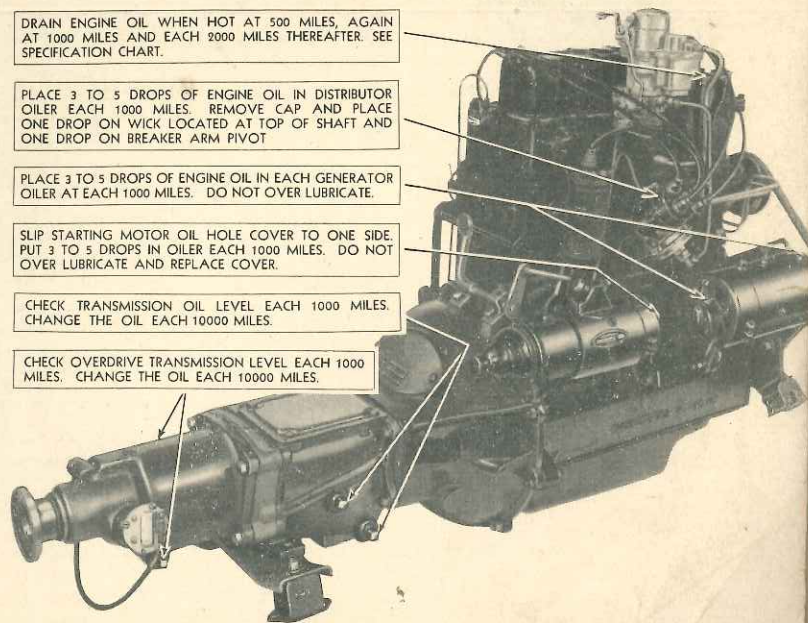
PLACE 3 TO 5 DROPS OF ENGINE OIL IN DISTRIBUTOR OILER EACH 1000 MILES. REMOVE CAP AND PLACE ONE DROP ON WICK LOCATED AT TOP OF SHAFT AND ONE DROP ON BREAKER ARM PIVOT.

PLACE 3 TO 5 DROPS OF ENGINE OIL IN EACH GENERATOR OILER AT EACH 1000 MILES. DO NOT OVER LUBRICATE.

SLIP STARTING MOTOR OIL HOLE COVER TO ONE SIDE. PUT 3 TO 5 DROPS IN OILER EACH 1000 MILES. DO NOT OVER LUBRICATE AND REPLACE COVER.

CHECK TRANSMISSION OIL LEVEL EACH 1000 MILES. CHANGE THE OIL EACH 10000 MILES.

CHECK OVERDRIVE TRANSMISSION LEVEL EACH 1000 MILES. CHANGE THE OIL EACH 10000 MILES.



CHASSIS LUBRICATION

For economical operation it is essential that you lubricate the chassis at regular intervals. You must also use the right type, grade and quantity of lubricant. To provide complete information for reference detailed recommendations are given below to be used with the regular lubrication chart.

As a word of warning note that your car should not be raised on a free-wheeling type hydraulic hoist unless the front spring is blocked up about four inches. Unless a block is used there is a possibility that the steering tie rod will be bent to throw the front wheels out of alignment.

Harm can be done to some units by over lubricating them. Do not use more than the amount of oil specified, especially when lubricating the universal joints and electrical units.

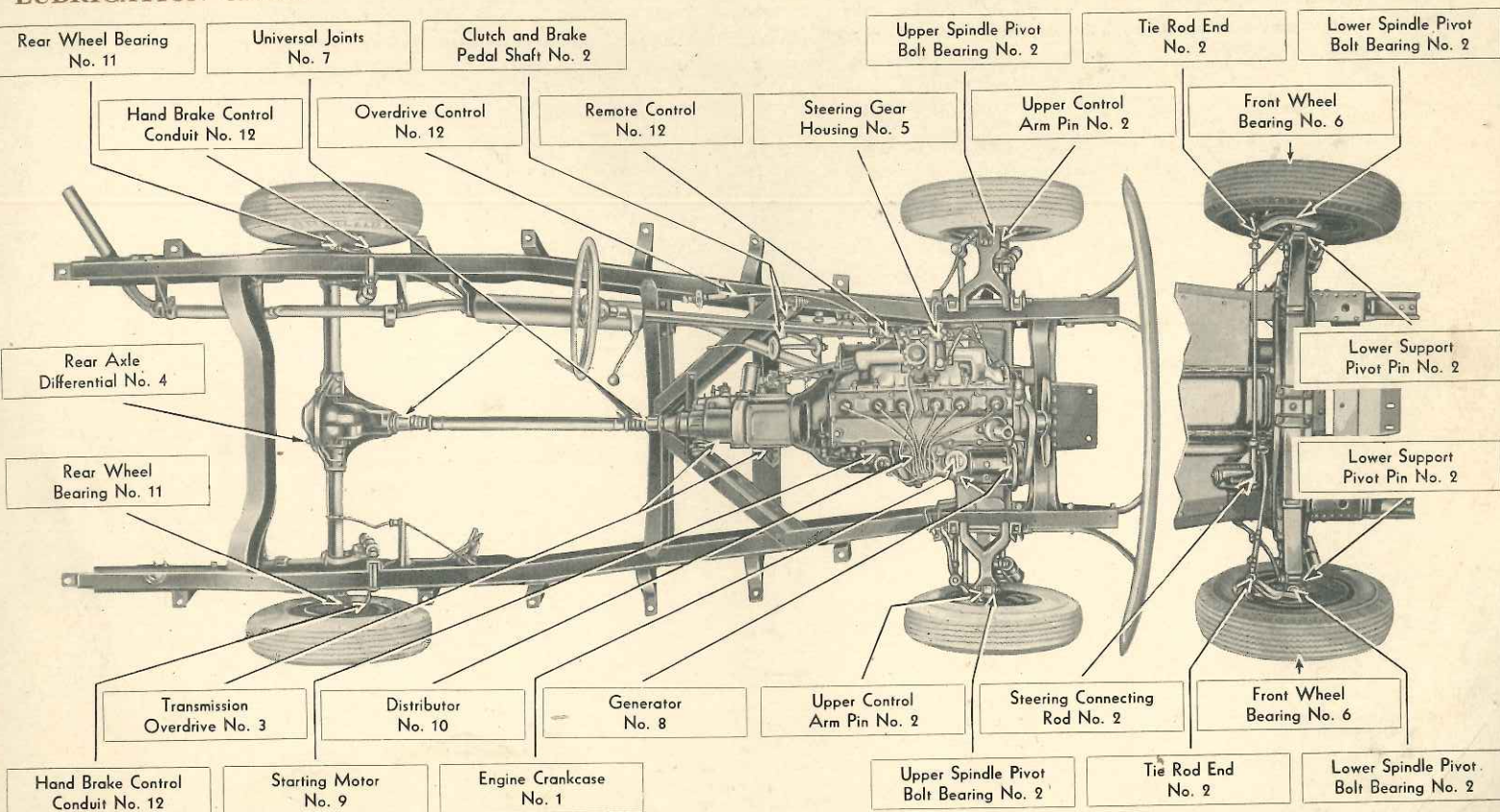
Use care not to force too much grease into the rear wheel bearings for the surplus may work through the seals to saturate the brake linings. Do not force additional grease into the bearing after it flows from the vent through the housing directly above the lubrication point.

At each 1,000 mile lubrication use an oil can to place a few drops of oil on the hood latch, door hinges, hood hinge and the various yokes and pins in the clutch and hand brake controls. Do not place engine oil on rubber parts such as the shock absorber mounting bushings.

Do not lubricate the springs and do not be concerned about the clutch release bearing and the water pump bearing for they were lubricated at the assembly for their life.

UNIT	ARROW No. ON CHART	QUANTITY	PERIOD OF LUBRICATION	TYPE OF LUBRICANT	GRADE OF LUBRICANT	
					WINTER	SUMMER
Engine	No. 1	4 Quarts	See "Engine Lubrication"	Engine Oil	See "Engine Lubrication"	See "Engine Lubrication"
Hydraulic Fittings	No. 2	As Required		Chassis Grease	No. 0	No. 1
Transmission	No. 3	1½ Pints	Check each 1,000 miles, Change each 5,000 miles	Transmission Gear Lubricant	SAE 80	SAE 90
Overdrive	No. 3	¾ Pints	Check each 1,000 miles Change each 5,000 miles	Transmission Gear Lubricant	SAE 80	SAE 90
Rear Axle	No. 4	2 Pints	Check each 1,000 miles Change each 5,000 miles	Hypoid Gear Oil	SAE 90	SAE 90
Steering Gear	No. 5	As Required	Check each 1,000 miles Check each 5,000 miles	Steering Gear Lubricant	SAE 140	SAE 140
Front Wheel Bearings	No. 6	As Required	Disassemble and Repack each 10,000 miles	Wheel Bearing Lubricant	No. 2	No. 2
Universal Joints	No. 7	1 Oz. Each Joint	Disassemble and Repack each 20,000 miles	Chassis Grease	No. 0	No. 1
Generator	No. 8	3 to 5 Drops	Each 1,000 miles	Engine Oil	SAE 10	SAE 20
Starting Motor	No. 9	3 to 5 Drops	Each 1,000 miles	Engine Oil	SAE 10	SAE 20
Distributor	No. 10	3 to 5 Drops	Each 1,000 miles	Light Engine Oil	SAE 10	SAE 20
Rear Wheel Bearing	No. 11	As Required	Sparingly each 1,000 miles	Chassis Grease	No. 0	No. 1
Control Conduits	No. 12	As Required	Disassemble and Coat each 10,000 miles	Light Graphite Grease		
Oil Bath Air Cleaner		1¼ Pints	Each oil change or oftener under dusty conditions	Engine Oil	Same grade used in engine	Same grade used in engine

LUBRICATION CHART





Cooling System

You should make it a practice to check the condition of the cooling system while lubricating your car. By so doing, you may notice a frayed fan belt or loose hose connection which, if not corrected, might cause your engine to overheat or possibly cause a costly delay in service.



FILLING THE COOLING SYSTEM

Your radiator cap is of the pressure type which reduces loss of the cooling solution through evaporation. In spite of this, some loss will occur and water level should be checked each time you purchase gasoline. The level of the water should be about $1\frac{1}{2}$ " below the bottom of the filler neck, for if more is added it will flow out of the overflow vent after the engine becomes warm, which is important when antifreeze is used.

Should your engine become overheated, never pour cold water or antifreeze into the radiator until it cools, for by doing so, you may crack the cylinder head or block.



DRAINING THE COOLING SYSTEM

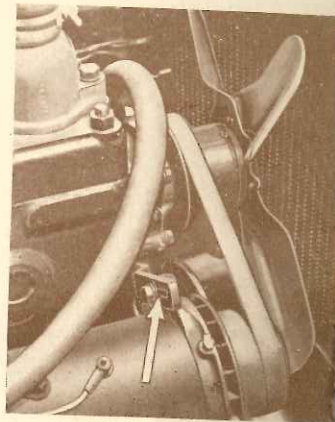
Two drain cocks are provided and both must be opened if you wish to completely drain the cooling system. This is important to know if it is necessary to drain the

system to prevent freezing.

To partially drain the system, remove the radiator cap to release any possible vacuum and open the cock at the rear, lower right side of the radiator. If it is necessary to drain the engine block, open the cock on the right side of the engine by the generator.

FAN BELT ADJUSTMENT

The fan belt not only operates the water pump and fan but also the generator, so it must be correctly adjusted to assure proper cooling and generator operation. It is not necessary for you to adjust it too tight for the drive is on the belt sides and the "V" construction provides increased driving power. Adjust it by moving the generator away from the engine until you can readily depress the belt 1", midway between the pulleys, with thumb pressure.



COOLING SYSTEM MAINTENANCE

A thermostat is mounted in the upper radiator hose attaching housing which is bolted to the cylinder head. It is important for it controls the temperature at which your engine operates.

Occasionally check your temperature gauge while driving. Should the temperature remain low or around 145° to 150° you should have your dealer check the thermostat without delay. Continued driving at sub-operating temperatures may cause the rapid formation of sludge and damage due to acid etching of some parts.

Should your engine suddenly overheat first check the fan belt to be sure the fan is operating. If the fan is operating, the difficulty is probably due to failure of the thermostat valve to open. In this case remove the thermostat housing and discard the thermostat which will allow free flow of the water so that you may continue your drive. However, have a new thermostat installed as soon as possible.

Keep your radiator core free of dirt and bugs, for a blocked radiator can not provide sufficient cooling. Clean it by forcing compressed air or water through the air passages from the rear, forcing the dirt out through the front.

You should flush out the entire cooling system about twice a year. A good way to do this is to remove the drain cocks from the block and bottom of the radiator. Place a hose in the radiator filler opening and adjust the water flow to equal that draining from the two openings. Start the engine and allow it to run until the system is thoroughly cleaned. After flushing you should use a rust inhibitor, in the cooling system which you can secure from your Dealer, to prevent the formation of rust and scale.

ANTIFREEZE

With the approach of cold weather an antifreeze solution must be used to prevent freezing of the water in the cooling system. It is important that you select an antifreeze having either an alcohol or ethylene glycol base for neither of these solutions will harm the cooling system.

The evaporating point of alcohol is approximately 170° Fahr. which is about the average operating temperature of the cooling system. It will therefore be satisfactory for use, however some evaporation will occur so it will be necessary for you to check the solution frequently to be sure freezing will not occur at anticipated temperatures.

Ethylene Glycol, usually termed a "permanent" type anti-freeze evaporates little, however any solution lost through leakage must be replaced.

Before installing anti-freeze check all hose connections to be sure they are tight, replacing any hoses which have deteriorated. This is especially important if you intend to use alcohol, for you will avoid the possibility of a fire resulting from leakage.

For your convenience to determine the amount of anti-freeze required, a chart for both alcohol and ethylene glycol is given below. This chart is based on a safe average of the cooling system capacities of both the four and six cylinder engines. The actual capacity of the six is 8¾ qts. and that of the four is 11 qts.; add one pint if equipped with a hot water heater.

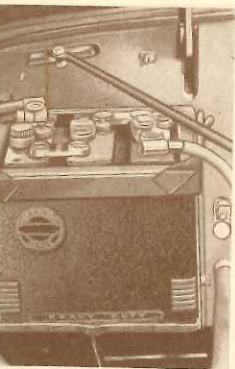
ALCOHOL				ETHYLENE GLYCOL			
Temp. Fahr.	U. S. Quarts	Imperial Quarts	Metric Liters	U. S. Quarts	Imperial Quarts	Metric Liters	
30°	1	4/5	0.946	1	4/5	0.946	
20°	2 1/8	1 4/5	2.011	2	1 2/3	1.892	
10°	3 1/4	2 4/5	3.075	3	2 1/2	2.839	
0°	4 1/4	3 3/4	4.022	3 3/4	3 1/8	3.549	
-10°	5	4 1/8	4.732	4 1/2	3 3/4	4.258	
-20°	5 1/2	4 1/2	5.205	4 3/4	4	4.495	
-30°	6 3/4	5 2/3	6.388	5 1/2	4 1/2	5.205	
-40°	7 1/4	6	6.861	6	5	5.678	

Should it be necessary to add antifreeze, be sure to run your engine sufficiently to thoroughly mix the new solution with the old.



Electrical System

The electrical system of your car primarily consists of the charging, starting, ignition and lighting circuits. These circuits with the necessary connecting wires produce and properly distribute the current for the operation of your car. You should make it a practice to periodically inspect the electrical connections to be sure they are clean and tight.



BATTERY

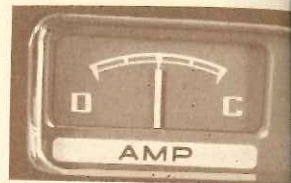
The battery is mounted on a bracket attached to the right side of the dash under the hood where it may be easily serviced. Damage due to bouncing is prevented by a hold-down frame with studs and wing nuts. Be sure to keep the frame normally tight at all times.

Each 1,000 miles or when you lubricate your car check the level of the liquid in each battery cell by removing the filler caps. When necessary add sufficient distilled water to maintain the level $\frac{3}{8}$ " above the plates. Guard against overfill-

ing and don't overlook replacing the caps.

It is important that you keep the cable connections tight and both the connections and the top of the battery clean at all times. Corrosion will form around the connections and if neglected a cable may corrode sufficiently to break or prevent the free flow of current to the electrical system. Corrosion may be readily removed by washing with a strong solution of baking soda and water followed by plain water.

In freezing weather you should use care to keep the battery fully charged, both as an aid to starting and to guard against freezing. A fully charged battery will not freeze even in extremely cold weather however, a fully discharged battery will freeze at about the same temperature as water.



READING YOUR AMMETER

The modern electrical system gives little trouble and requires little attention other than regular lubrication of mechanical units with battery care and a periodical check to be sure that connections are tight and clean. If trouble does occur it usually develops slowly and very often your ammeter will warn you so that economical correction can be made before an expensive repair is necessary.

With a fully charged battery your ammeter should show one or two points on the charge side when your engine is running, as the battery output is at 6 volts and that of the generator a maximum of 8 volts. When you start your engine some current will be taken from the battery by the starting motor so the ammeter will show an increased charging rate until this current is replaced.

Should your ammeter show a charging rate greater than one or two points when you know that the battery is fully charged the voltage regulator is probably at fault and should be checked without delay. Continued overcharging will damage your battery and possibly the generator also, for abnormal heating occurs. Heating evaporates the water in the battery rapidly so if your battery requires more than the normal amount, overcharging is indicated.

Should your ammeter show a few points on the discharge side with the engine running and the battery fully charged either the voltage regulator circuit breaker is failing to operate or the generator is not charging and these units should be checked. While driving glance at the ammeter occasionally and if it does not act in a normal manner have your Dealer check the charging circuit.

GENERATOR AND REGULATOR

The generator and current regulator form one circuit to produce and control the current required to operate the electrical system. Each unit is dependent upon the other for satisfactory operation and when any adjustments are made accurate test instruments are required. Should any trouble develop you should consult your Dealer.

It will pay you to have your generator inspected, at the end of each years operation, for the brushes and commutator are wearing parts and servicing them before extreme wear occurs may save you an expensive repair.

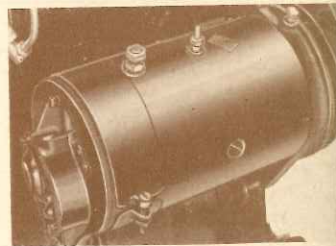
LIGHTING SYSTEM

The various lights with the connecting

wires and control switches make up the lighting system. The system is protected by an automatic circuit breaker, mounted on the main light switch, which clicks open and closed should a wire become grounded or shorted. It remains open long enough to prevent the wires from becoming overheated.

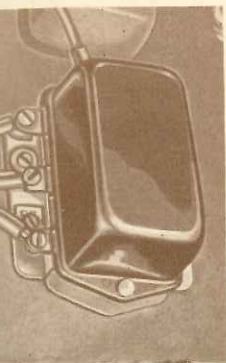
An extra connecting terminal is provided directly back of the circuit breaker. Should you install any electrically operated accessories or gadgets they should be connected to this terminal.

The headlights are of the sealed beam type and they as well as all other bulbs may be easily replaced. Bulb types and numbers are given below for your convenience should you require a replacement bulb or desire to carry spares.



It is a good precaution for you to occasionally check the connections in the lighting system and also examine the wire insulation to guard against a loose wire or worn and frayed insulation. The wires of each circuit, are grouped together and built into a harness. Be sure that each harness is properly slipped in position to prevent wear and chafing.

Bulb	Type	Bulb Number
Headlights	Sealed Beam	45 Watt
Parking	2 C.P.	No. 55
Tail and Stop	21-3 C.P.	No. 1158
Instrument Panel	2 C.P.	No. 55
Dome	15 C.P.	No. 87
High Beam Warning	1 C.P.	No. 51





Brakes

Your car is equipped with hydraulic brakes to provide smooth, easy operation. Pressure applied at the pedal is transmitted equally to the brakes on all four wheels.

BRAKE CARE

When you depress the brake pedal, pressure is applied to hydraulic fluid which in turn applies equal pressure to all the brakes. As the brake linings wear through normal use, free motion of the pedal will increase. When two thirds of the pedal travel is ineffective you should have the brakes adjusted. External adjustments are provided so little time is required.

Once each year it will pay you to have the wheels removed to have all dust and dirt cleaned from the brakes and drums. Dirt which acts as a slight abrasive to cause increased wear is bound to accumulate.

After several adjustments it may be necessary to reline the brakes. Don't delay having this done for the drums may become worn causing an expensive repair or replacement.

BRAKE ECONOMY

Your brakes were engineered for effective operation and long life. You can, however, increase their life by proper operation.

1. Avoid sudden stops as they cause both the brake lining and tires to wear excessively.
2. When driving in traffic apply the brakes firmly for a short period then repeat the application if necessary. This is better than a lighter application for a long period as less heat is generated on the lining surface.
3. Anticipate stops when possible to avoid unnecessary use of the brakes.

4. When descending a long hill use a lower transmission gear. If it is necessary to use the brakes, apply them with a series of "snubbing" actions rather than constant pressure. Rapid wear occurs when the brakes are allowed to become overheated.
5. Have your brakes relined promptly when they need it.

BRAKE MASTER CYLINDER

The brake master cylinder is attached to the frame directly in front of the brake pedal. It is a compression chamber for your brakes and also a reservoir for the hydraulic fluid required. It is necessary that reserve fluid be maintained to assure proper operation.

As a precaution you should regularly check the level at each 1,000 mile lubrication. While little fluid is used you will be able to note a sudden drop in level which would indicate leakage which might cause brake failure. The capacity of the brake system is about $\frac{3}{4}$ pint. Before checking, clean the cap to prevent dirt dropping into the reservoir and keep the level about $\frac{1}{2}$ " below the cap opening.





Trouble Shooting

It is well to have available the necessary information to enable you to make the usual checks to locate trouble which might occur when professional assistance is unavailable.

ENGINE WILL NOT RUN

Failure of your engine to operate is usually caused by lack of fuel at carburetor or insufficient or no spark at spark plugs.

First check to be sure that there is ample fuel in the tank. If there is sufficient fuel, remove the fuel tube from the carburetor and operate the starting motor noting whether or not fuel flows from the tube. If fuel does flow from the tube you have proven that the fuel system is satisfactory and the trouble is probably in the electrical system. Failure of the fuel to flow indicates that there is an obstruction in the fuel system or that the fuel pump is not operating. In this case remove the fuel pump sediment chamber cover by removing the attaching screw at the top center (bottom center on six cylinder engines) of the pump. Remove the filtering screen mounted in the chamber and check it. If it is obstructed you have probably located the trouble or if it is clean the pump is probably at fault.

Note, however that in freezing weather there is always the possibility that water has accumulated in the fuel line and frozen to obstruct fuel flow.

Should the fuel flow be found satisfactory check the ignition system. The quickest check is to turn on the ignition switch and remove one spark plug cable from a plug. Hold the cable terminal about $\frac{3}{16}$ " from a clean unpainted part of the engine and operate the starting motor. If the ignition system is satisfactory a fat, blue spark will jump from the terminal to the engine. No spark or a weak white spark indicates trouble.

Trouble in the ignition system can usually be traced to dirt and moisture on the ignition system units, to a loose or dirty electrical connection or to a fault in the coil or distributor.

The units of the ignition system should be kept clean, for dirt accumulations absorb moisture which is apt to conduct part of the electric current to the grounded side of the electrical system and cause trouble.

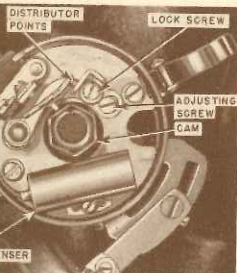
If these parts are damp and dirty, wipe the spark plug ignition wires, distributor and coil dry and clean. If it is known that engine stoppage is due to moisture and a carbon tetrachloride type fire extinguisher is available, spray these units thoroughly with the extinguisher liquid. This liquid evaporates rapidly and as it evaporates will dry the units to enable you to start the engine.



If it is proven that the trouble is not due to moisture check all the wire connections to be sure that they are tight and clean.

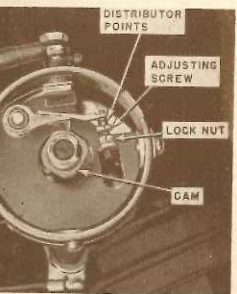
Should your check prove that the trouble is in the coil or distributor, remove the distributor cap and rotor and examine them for cracks, carbon runners or burned places. If any of these conditions are found it will be necessary to replace the part.

Examine the distributor points to be sure that they are clean and are correctly opened by the distributor cam. They must make good contact when closed and open about .020" when the breaker cam opens them as far as possible. This is about the thickness of a thin dime and the illustration shows the method of adjustment. Should they require polishing when you do not have a stone or point file available you can usually clean them sufficiently to start the engine by rubbing them against the flat surface of a side walk or other stone.



As a further check test the coil and distributor. To do this turn the engine until the points are closed and remove the coil to distributor high tension cable from the center terminal in the distributor cap.

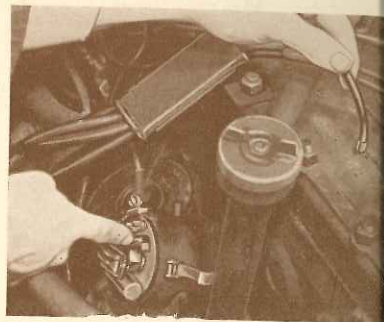
Turn the ignition switch on and while holding the cable terminal about $\frac{3}{16}$ " from a clean unpainted part of the engine, snap the breaker points open and closed with your finger. If the coil, distributor points and condenser are satisfactory a fat, blue spark will jump from the wire



terminal to the engine. If this should be a thin, white spark the trouble is probably in the condenser and a new one will be required.

ENGINE RUNS BUT MISSES

If one or more cylinders misfire faulty ignition is probably the cause. First examine the high tension cables to be sure that the distributor cap ends are well down in their sockets and the spark plug terminals are connected. Wipe the cables and distributor cap dry and clean. Should the misfiring continue the trouble may be due to one or more faulty spark plugs. To locate a bad spark plug speed the engine up slightly and use a screw driver with an insulated handle to short out each plug in succession. Any plug which when shorted does not change engine speed is faulty and must be cleaned or replaced.



STARTER FAILS TO OPERATE

If the starting motor will not turn the engine the battery is probably discharged or one of the cable connections is loose or corroded. Should the battery contain sufficient current to operate the lights the engine can usually be started when your car is towed with the overdrive control pulled out on cars so equipped.

Usually failure of the starting motor to operate may be traced to corroded battery terminals. Corrosion may be removed by washing with a strong solution of baking soda and water. After cleaning coat the terminals with grease which will reduce corrosion somewhat.



Wheels and Tires

The most important factor of safe vehicle operation is regular and correct tire maintenance. Tire economy is also dependent upon correct inflation and regular cross switching to secure maximum wear.

TIRE PRESSURE

The practice of checking tire pressure each time you lubricate your car or oftener if you do little driving, is the most important item of maintenance to increase tire life and economy. It is also a good precaution to inspect your tires visually each time you drive your car for you may detect a partially deflated tire which, if driven, might be ruined.

Tire pressure will change slightly because of expansion due to heat. The following recommended pressures are an average which you should follow for build-up, due to expansion and dropping of pressure due to cold, has been considered.

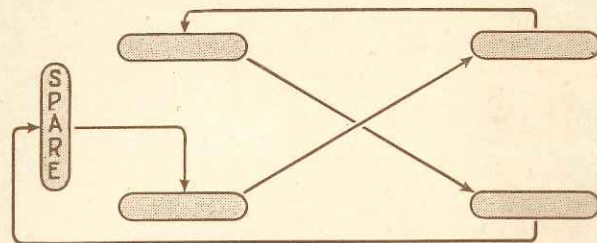
Model	Tire Size	Pressure Front	Pressure Rear
4-73 Station Wagon	6.70 x 15	20 lbs.	24 lbs.
4-73 Jeepster	6.40 x 15	24 lbs.	24 lbs.
4-73 Panel Delivery	6.70 x 15	20 lbs.	24 lbs.
6-73 Station Wagon	6.70 x 15	20 lbs.	24 lbs.
6-73 Jeepster	6.40 x 15	24 lbs.	24 lbs.

When checking pressure be sure that you use an accurate gauge and don't fail to reinstall the valve caps for they prevent the entrance of dirt and seal the valves against loss of pressure.

TIRE ROTATION

Other than correct inflation, the most important tire care, to increase wear and economy, is cross-switching or tire rotation.

Due to the driving forces, steering effort, and average road contour equal wear does not occur on all four tires. By correctly rotating the tires, including the spare, the useful life of



all the tires is increased and you receive the maximum service and economy from all five.

The tires should be rotated, as shown in the illustration, each 5,000 miles. The rear wheels should be moved to the opposite front positions and the front wheels straight back to the rear, installing the spare wheel in place of the one which was on the right front.

WHEEL ALIGNMENT

Front wheel alignment must be accurately adjusted to insure tire life. The wheels of your car were adjusted at the factory and rechecked by your Dealer before delivery to you. You

should, however, periodically check your front tires to note any abnormal or rapid wear which will indicate incorrect wheel alignment. This is important for your wheels can be forced out of alignment by striking a curb or other obstruction or by having another car back into the left front wheel when you are parked against the curb so that the right wheel can't swing to absorb part of the shock. At any sign of rapid wear have your Dealer check the alignment.

MOUNTING AND DISMOUNTING WHEELS

A bumper jack and socket type wrench is provided in the tool kit to enable you to change wheels in an emergency.

Should it be necessary to change a wheel, place the jack under the bumper at the attaching bracket nearest to the wheel to be removed. Set the hand brake and if possible block the wheels to guard against the car rolling. Use a screw driver to snap the hub cap from the spring type retainers. Before lifting the car enough for the wheel to clear the ground loosen the wheel attaching nuts one or two turns so that they may be easily removed.

To remove the wheels on the left side of the car, the nuts must be turned to the right and to remove those on the right side of the car, to the left. This is necessary as the mounting studs on the left side have left hand threads and those on the right side right hand threads to prevent the nuts from being loosened on the road through wheel action.

Dismount the spare wheel to have it immediately available after which raise the car until the tire clears the ground. Remove the attaching screws and lift the wheel from the hub. Place the spare wheel in position and start the retaining nuts on the studs with the tapered side of the nuts toward the wheel. Use the wrench to tighten the nuts snugly, tightening them on

opposite sides of the hub in rotation to assure pulling the wheel into flat contact with the hub and prevent wheel wobble. Remove the jack after which retighten the nuts and reinstall the hub cap.

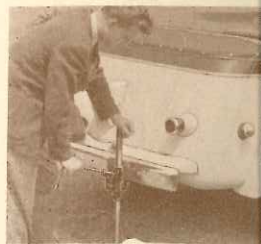
TIRE ECONOMY

While correct inflation and regular cross-switching is the most important tire maintenance for long life and economy there are a number of other precautions which can be taken to secure even greater tire service. These are listed below for your information.

1. Never run a tire partially inflated or it will be ruined.
2. Avoid sudden acceleration to spin the wheels and sudden stops to slide the wheels.
3. Avoid excessive speed on curves.
4. Avoid striking sharp objects or edges of holes in the highway.
5. Do not drive in street car tracks or ruts.
6. Do not bump the sides of the tires into curbs.

TUBE REPAIR

Most present day inner tubes contain a large percentage of butyl rubber. The conventional cold patch method of repairing tubes is unsatisfactory for repairs. If repairs are required, vulcanizing according to established practice for this type tube is necessary.





Accessories for Your Car

Many accessories have been Factory tested and tailored to fit your car. For your information the most important are described below.

The appearance and usability of the accessories supplied by the Factory is unquestioned and many of them increase driving safety. Your Dealer can supply them or if he does not have them in stock he can quickly obtain them for you.

WINDSHIELD WASHER

A clean windshield is necessary for safe driving. The twin washers enable you to clean your windshield while driving to eliminate annoying delays while on the road. You need only to turn the wiper control to the left to provide twin sprays of water to loosen dirt. A turn to the right of the control operates the wiper blades to sweep the vision area clean.



LOCKING TYPE FUEL TANK CAP

This type cap is valuable to prevent theft of fuel or tampering with the tank.



UNDER HOOD LIGHT

The under hood light completely illuminates the engine compartment when the hood is raised. It is easily installed and is invaluable, should adjustments be necessary at night. An automatic switch turns it on when the hood is raised and off when lowered.

REAR WINDOW WIPER

It is dangerous at times not to be able to see traffic at the rear in your rear vision mirror. The rear wiper provides this necessary rear vision in bad weather.



HEATER AND DEFROSTER

Provisions have been made, in the design of your car, for installation of this heater. It is installed in a prepared position to become an integral part of your car.



SPOTLIGHT

A spotlight is always valuable to locate street numbers or read road signs. This sealed beam lamp will pick out objects a thousand feet away. It has a pistol grip and is heavily chrome plated.

DIRECTIONAL SIGNAL

The directional signal allows you to warn oncoming traffic of an intended turn by simply flipping a finger tip control switch without removing your hands from the steering wheel. The flasher lights are installed in the parking and tail lamps. This signal is of special value in winter when you drive with the windows closed.





Everyone Admires a Clean Car

It will pay you to keep your car clean. Everyone admires a clean car and you are also protecting your investment by maintaining its resale or trade-in value.

CAR WASHING

When your car gets dusty, a clean, dry cloth is usually all you need to brighten it up again. If grit or sand particles are mixed with the dust, or if the car is muddy, it is best to wash it with cold water and dry with a chamois or soft cloth for otherwise the surface will be scratched. Use nothing but clear cool water when washing your car. Never wash it in the direct rays of the hot sun and always wait until the sheet metal surfaces are cooled before washing. In the winter more frequent washing may be necessary in those sections of the country where salt or calcium chloride is used on the roads to melt the snow and ice. These substances have a detrimental effect if allowed to remain on finished surfaces or chromium.

POLISHING THE BODY

Should your car become extremely dirty and especially if dirt has remained on it for a long time, it may look a little dull even after it has been washed. In this case you can bring back the original polish and lustre by using a small amount of good polish. Rub the polish lightly until it is dry so it will not leave a damp surface to collect dust. Do not, however, polish your car more often than necessary for each time you do so a thin layer of finish is removed.

Baked type enamel finish continues to harden by oxidation for about thirty days in warm weather and from sixty to ninety days in cold weather. You should not, therefore, wax your car during this period for wax prevents oxidation.

TAR OR ROAD OIL

Tar or road oil may be removed from the body without injury to the finish by using one of the standard brands of tar remover. If the tar has hardened into lumps, soften it first by using lard or kerosene. Usually it is advisable to apply a little polish afterwards to restore the high lustre.

CARE OF THE INTERIOR

Keeping the inside of your car clean is no more difficult and not much different than taking care of the rugs and furniture in your home. About once a month, or oftener if you think necessary, it is a good idea to clean the upholstery and sweep the accumulated dust from the floor.

The vinyl type upholstery used in all models should be cleaned with a mild soap and water only. This is a plastic material which is extremely tough, however never use gasoline, alcohol, acetone and other materials of this type for cleaning as they are solvents which will damage the vinyl.

Mohair fabric upholstery is used in some Station Wagons. If your car has this type upholstery it is good practice for you to use a vacuum cleaner occasionally to remove the accumulated dust. For removal of spots and stains the following suggestions may be helpful.

Candy stains, other than chocolate may be removed by rubbing with a cloth moistened with hot water. Remove chocolate stains by rubbing with a cloth and lukewarm water, then sponge with carbon tetrachloride.

Moisten chewing gum with carbon tetrachloride and work the gum off with a dull knife while the fabric is still moist.

Rub fruit stains vigorously with a cloth dampened with hot water, then let dry and sponge with carbon tetrachloride.

Use cleaning fluid or carbon tetrachloride to remove grease and oil stains. If the fabric is saturated with oil, sponge on the cleaning fluid and soak it up by pressing a white blotter on the spot before sponging in the usual manner with a cloth dampened in the fluid.

Remove ice cream in the same manner as fruit stains. If the stain is persistent, use a cloth moistened with warm soap suds, then cold water. After drying, sponge with carbon tetrachloride.

To remove lipstick sponge on a little carbon tetrachloride and immediately press a clean blotter firmly on the spot. Repeat the application until the stain is removed.

To remove paints and lacquers use a cloth saturated in turpentine, then sponge with a cloth and cold water.

Wax type shoe polish may be removed with a cloth saturated with carbon tetrachloride. White polish will usually come off with a stiff brush or it may be necessary to moisten with cold water, let dry, and then use a brush.

Remove blood stains with a clean cloth moistened in cold water.

To remove tar, moisten the spot with carbon tetrachloride and remove as much of the tar as possible with a dull knife. Sponge with cleaning fluid.

To remove water spots sponge the entire panel with a clean cloth dampened with cold water, then sponge the spot with a cloth moistened with carbon tetrachloride.

CLEANING GLASS

When cleaning windows, the windshield and other glass use a clean linen cloth for it will remove dirt and grease from the glass and is comparatively free of lint.

Never operate your windshield wiper when it is dry to remove dirt or the glass will be scratched.

RUNNING GEAR

Cleaning the under side of your car and the inside of the wheels can best be done with a small powerful stream of water from a hose. This stream dislodges any mud and dirt that may have accumulated. Occasionally the use of kerosene or a stiff brush may be necessary.

CHROMIUM TRIMMING

No polish is necessary to keep the chromium bright. It is only necessary to wash and wipe it dry with a clean cloth.

Your bumpers present a special problem to keep the polished surface bright because of the severe use to which they are subjected. After a time they are likely to become scuffed and marred so small rust spots may appear. The best remedy is to clean off the rust with a little kitchen scouring compound on a cloth, then apply a film of oil, wax, transparent varnish or lacquer to prevent more rust forming. It will be necessary to repeat this treatment occasionally.

TIRES

Water and a sponge is ordinarily all that is required to clean your tires although in some cases it may be necessary to use soap. If spotted with road tar or any other substance hard to get off use mechanic's soap containing a mild abrasive, kerosene or ordinary kitchen cleaner.

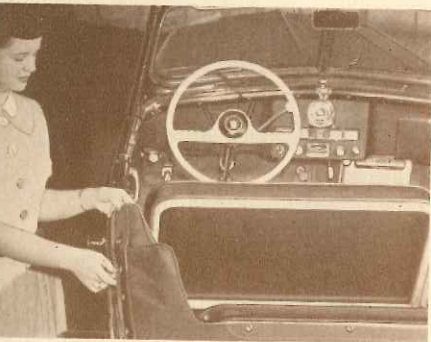


Operating the Jeepster Top

The Jeepster top is made of durable fabric and has been designed to be lowered or raised with a minimum of effort. A spring balance supports the weight and provides nearly automatic operation.

RAISING THE TOP

To raise the top first remove the storage compartment cover where it is snapped in position around the edge of the body. To release the snaps grasp the edge of the fabric directly opposite the edge of each snap and pull up.



Pull the rear seat back forward and use the handle to pull the top from the storage compartment. The spring balance will lift the top after it has been pulled slightly up and forward.

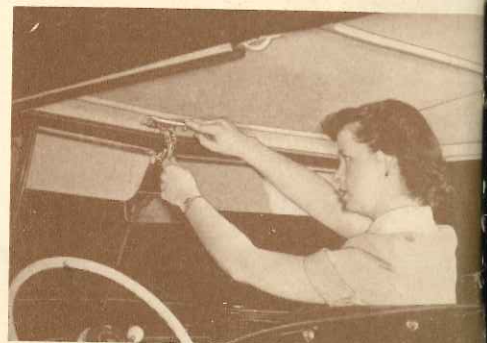


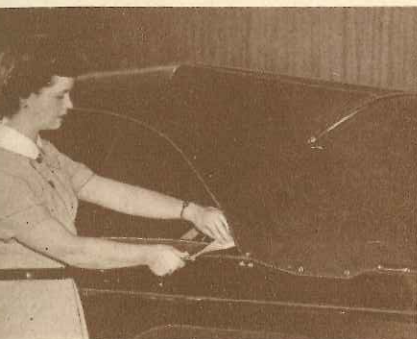
Guide the top forward to rest on the header bar mounted on top of the windshield.

Clamp the front end of the top to the windshield with the three clamps mounted on the header bar, fastening the center toggle first.

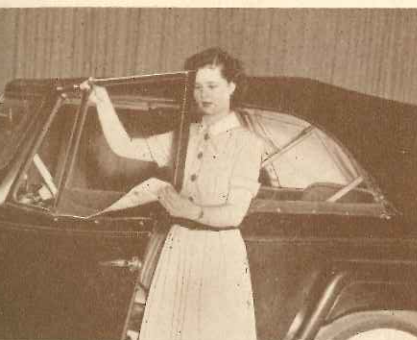


Remove the side curtains from the storage pouch located directly back of the rear seat.





Insert the rear curtain rods in the body sockets and push them all the way down. Attach each curtain to the body with the six fasteners and to the top with the five fasteners. Fasten the three snaps which attach the rear of the top to the body on each side.



Slide the front edge of the front curtains into the channels in the rear edge of the vent wings and attach each curtain to the body with three fasteners.

Place the storage compartment cover in the curtain pouch.
To lower the top reverse the operations required to raise it.

CARE OF THE JEEPSTER TOP

Your Jeepster top is made of rugged materials and is designed for long service. As with any soft top, however, continued attractive appearance and length of service before replacement is necessary depends upon the care you give it.

To maintain a new appearance it is necessary to occasionally give the top a coat of top dressing. How often this is necessary depends upon climate and the amount of exposure to the weather. When the top and curtain fabric appears slightly weathered, coat them with a good quality dressing.

It is best to use the dressing recommended by the Factory and purchased from your Dealer for it was selected only after complete chemical and exposure tests by the Factory.

The rear top and curtain windows are made of vinyl which is a newly developed plastic material. Should they become soiled you should wash them with mild soap and water and dry with a soft cloth.

While vinyl is extremely tough and rugged, gasoline, alcohol, acetone and other materials of this type are solvents and should never be used. Don't allow a service station attendant to spray the curtain windows with windshield cleaner for there is always the possibility that such cleaners contain a solvent which might damage the vinyl.

Continued transparency of the vinyl for satisfactory vision will depend upon the care you give the curtains. After use they should be carefully stored in the pouch provided back of the rear seat. Use care when storing and tighten the pouch cover straps to prevent rubbing and scuffing due to road vibration.

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